INDEX

SOVIET RADIOCHEMISTRY

Volume 12, Numbers 1-6, 1970

SOVIET RADIOCHEMISTRY
Volume 12, Numbers 1-6, 1970
(A translation of Radiokhimiya)

A

Abdukayumov, M.-747
Abramov, A. A.-713
Afanas'ev, Yu. A.-296, 629
Agashkina, G. D.-312
Aleksandrov, B. M.-822
Alekseeva, L. S.-881
Aloi, A. S.-704
Andreev, V. I.-152
Apraksin, I. A.-14
Arutyunyan, A. M.-387, 393
Astrashkova, L. G.-356

B

Babayan, S. G.-387, 393
Baikov, S. D.-137
Balakhovskii, O. A.-578
Balek, V.-137
Barbanel', Yu. A.-493, 719
Basalaeva, L. N.-537, 856
Bayanov, A. P.-734
Belov, L. M.-689
Belov, V. Z.-530
Blinova, N. I.-804
Blokhin, V. I.-763
Borodin, P. M.-58, 473
Brezhneva, N. E.-234, 511
Brigevich, R. F.-383
Bryzgalova, R. V.-252, 259, 663, 788, 793
Bugorkov, S. S.-453, 458
Buklanov, G. V.-530
Bulyanitsa, L. S.-607, 612, 616
Bulycheva, T. I.-862
Burtnenko, L. M.-568
Bushuev, N. N.-379
Bykhovtsov, V. L.-381, 764

C

Chaikhorskii, A. A.-493, 766, 771
Chernitskaya, I. V.-259, 793
Choporov, D. Ya.-490
Chuburkov, Yu. T.-530
Chudinov, É. G.-490

D

Dement'ev, V. D.-511
Dovedov, Yu. A.-537
Drobysh, V. V.-361, 710
Dzhemard'yan, Yu. A.-756

E

Efimov, A. N.-731
Egorov, Yu. V.-220
Egorova, I. V.-879
Ékkerman, V. M.-883
Enikeev, R. Sh.-178
Eremenko, Z. V.-834

F

Fedorova, L. A.-303
Firsova, L. P.-130
Frolov, V. I.-110
Fomin, V. V.-288
Frolov, Yu. G.-716

G

Garbauskas, G. K.-634
Gavrik, V. Ya.-759
Gel'man, A. D.-85, 201, 210, 438, 655, 660, 763, 870, 888
Gil'bert, É. N.-501, 503
Gladyshev, V. P.-178
Glazunov, M. P.-578
Glukhov, G. G.-503
Goncharov, V. V.-642, 881
Gordienko, L. A.-107
Gorebenko, F. P.-620
Grebenshchikova, V. I.-252, 663, 788, 793
Grinberg, A. A.-461
Grushko, Yu. S.-498
Groz, P.-120
Gunder, O. A.-883
Gurikov, Yu. V.-631
Gusev, Yu. K.-465
Guseva, L. I.-737
Gvozdev, B. A.-573
Gyrd, E.-573

I

Ianovich, E.-125
Ilozheva, L. V.-427
Iofa, B. Z.-29, 54, 713, 751, 769, 865
Ionesku, S.-573
Isaenko, V. A.-854
Isupov, V. K.-465

K

Kabachnik, M. I.-303
Kaimin, I. V.-578
Kalyamin, A. V.-822
Kapshaninov, Yu. I.-511
Karago, L. V.-240
Karpacheva, S. M.-427
Khalkin, V. A.-120, 176, 385, 744
Khanaev, E. I.-158
Khar'ono, A. B.-130
Khorkhorina, L. P.-312
Khoroshailov, A. G.-404, 410
Kirgintsev, A. N.-704, 707, 854
Kirin, I. S.-465
Koba, V. S.-883
Kochnov, V. A.-332
Kodochigov, P. N.-578
Kolychev, V. B.-75
Kolysh, A. V.-778, 783
Komarov, E. V.-264, 274, 278, 283, 422, 488
Komarov, V. N.-264, 274, 422
Komkov, Yu. A.-206, 655
Kordyukevich, V. O.-352
Korovin, S. S.-14
Korshunov, I. A.-398, 778, 783
Kosyakov, V. I.-704
Kotel'nikov, L. A.-498
Kovarskaya, E. N.-229
Kovba, L. M.-486, 768, 813
Kozlov, A. A.-215
Krestov, G. A.-562, 879
Krestova, N. V.-562
Kripin, L. A.-158
Krivokhatskii, A. S.-453, 458, 822

Krot, N. N.-81, 201, 206, 210, 438, 655, 660, 763, 870, 888
Kryukova, A. I.-398, 778, 783
Kuchkina, E. D.-620
Kudin, O. V.-813
Kuklin, Yu. S.-130
Kumok, V. N.-155
Kurchatova, L. N.-495, 747
Kush, V.-367
Kuzin, V. I.-120, 176, 385
Kuzina, A. F.-578
Kuzina, M. G.-358
Kuz'mina, M. A.-461
Kuznetsov, R. A.-383, 498, 885

L

Lanin, V. P.-868
Laskorin, V. N.-303
Lebedev, N. A.-95
Legin, E. K.-631
Levin, V. I.-234, 469, 495, 747
Levskii, L. K.-377
Lipovskii, A. A.-358
Litvitskii, A. M.-747
Luginin, V. A.-873
Lur'e, B. G.-822
Lyubtsev, R. I.-152

M

Makagonova, L. N.-769
Makarov, V. M.-547
Maksimov, I. N.-170
Maksimova, A. M.-689
Malinin, A. B.-495, 747
Malinin, G. V.-163, 726
Mal'tseva, A. N.-312
Mal'tseva, N. S.-582
Markov, B. N.-713
Markov, G. S.-246
Markova, V. G.-642, 881
Maslov, O. D.-530
Medved', T. Ya.-303
Mefod'eva, M. P.-210, 438
Merkusheva, S. A.-155
Mezhov, É. A.-34, 364, 552
Mikhailichenko, A. I.-433, 556
Mikhailov, G. I.-756
Mikhailova, A. I.-537, 856, 859
Mikul'ski, Ya.-367
Milyukova, M. S.-817
Mironov, V. P.-586
Mitchenko, Yu. I.-473
Molchanova, N. G.-862
Molochnikova, N. P.-798
Moskal'kova, É. A.-722
Moskvin, L. N.-167, 692, 698
Murav'eva, L. P.-493
Murin, A. N.-377, 822
Murinov, Yu. I.-322, 477, 480
Musakin, A. P.-637
Myasoedov, B. F.-798, 826
Myuzikas, K.-826

N

Naumenko, N. I.-338
Nauryzbaev, M. K.-178
Nefedov, V. D.-120, 173, 176, 385, 862
Nesmeyanov, A. N.-29
Nikitin, Yu. E.-322, 477, 480
Nikityuk, L. N.-374
Nikolaev, A. V.-296, 447
Nikolaev, V. M.-110
Nikolotova, Z. I.-473
Nikol'skii, B. P.-75, 152, 246
Nikonov, V. I.-71
Norseev, Yu. V.-120, 176, 385
Novikova, N. A.-751, 865
Novoselov, V. S.-234

O

Oblova, A. A.-578
Obukhova, M. E.-875, 877
Okhanova, L. A.-817
Olevinskii, M. I.-620
Osipov, S. V.-110
Osipova, V. V.-808

P

Pakhomov, L. G.-398
Palei, P. N.-798
Paramonova, V. I.-110
Pavlov-Verevkin, B. S.-645
Pavlova-Verevkina, A. I.-371
Pazukhin, E. M.-689
Peretrukhin, V. F.-81
Permyakov, A. A.-753
Petrov, V. I.-591
Petrukhin, O. M.-565
Petryaev, E. P.-586
Petrzhak, G. I.-240
Petrzhak, K. A.-453, 458
Pimenova, R. M.-433
Pobezhimovskaya, D. N.-89
Polikarpov, Yu. M.-303
Poluéktov, N. S.-568
Polyakova, V. S.-338
Ponosov, I. N.-591
Popov, I. B.-511
Popov, D. K.-537, 856
Posvol'skii, M. V.-246, 327, 332, 443
Potapova, S. A.-288
Potekhin, V. M.-637
Proskuryakov, V. A.-637
Pushlenkov, M. F.-20, 422, 488, 875, 877

R

Rachev, V. V.-371
Raichev, Kh.-744
Ratnikova, M. G.-234
Razumova, G. N.-116
Remov, A. G.-102, 161
Reshet'ko, Yu. V.-1
Reznik, A. M.-14
Rodionova, L. P.-804
Rogozin, Yu. M.-252, 259, 663, 788, 793
Romanov, G. A.-726, 729
Romanov, Yu. F.-822
Rozen, A. M.-1, 14, 58, 322, 473, 477, 480
Rudenko, N. P.-352
Ryabinin, A. I.-296
Rybakov, B. N.-374
Rykov, A. G.-674, 680
Ryzhova, L. V.-817

S

Sabéu, K.-573
Samoilovich, M. I.-107
Sarbash, A. N.-173
Savel'ev, Yu. I.-9
Savoskina, G. P.-607, 612, 616
Savyin, S. B.-817
Selivanov, N. T.-637
Semenov, S. I.-751, 865
Serebrennikov, V. V.-155
Sergeev, G. M.-356
Sergievskii, V. V.-716
Sevost'yanov, Yu. G. 29, 751
Shalaevskii, M. R.-530
Shamaev, V. I.-634
Shashukov, E. A.-215
Shavinskii, B. M.-707
Shchebetkovskii, V. N.-404, 410
Shcheglovski, Z.-367
Shchepetil'nikov, N. N.-20
Sheglovskii, Z.-582
Shesterikov, V. N.-364, 552, 710
Sheidina, L. D.-229
Shevchenko, V. B.-541
Shevelev, G. V.-629
Shevelkina, T. S.-830
Shilov, V. P.-186, 438, 660, 870, 888
Shmidt, V. S. -34, 364, 552, 710
Shorik, N. A.-155
Shpunt, L. E.-488
Shuba, I. D.-116

Shvedov, V. P.-753, 840, 846
Sinotova, E. N.-173
Sirtesh, L.-740
Skovorodkin, N. V.-453, 458
Smelov, V. S.-361, 710, 868
Smirnova, G. D.-379
Smyk, Z. A.-868
Sobotovich, É. V.-102, 161
Sokolov, S. V.-469
Sokolova, V. K.-143, 447
Solntseva, L. V.-726, 729
Solov'eva, G. D.-586
Sorokina, A. V.-453, 458
Sotnikov, V. S.-338
Spiridon, S.-573
Spitsyn, V. I.-578, 595
Spivakov, B. Ya.-505
Stabrovskii, A. I.-379
Starchik, L. P.-756
Stepanov, A. V.-689
Stepanova, L. N.-240
Strizhov, S. G.-850
Stupin, N. P.-303
Surin, V. M.-379
Sventitskii, E. N.-607
Sviridova, R. A.-41
Syroezhko, A. M.-637
Sysoeva, L. N.-170

T

Tarasov, V. V.-623, 626
Tarasova, L. A.-371
Tarlakov, Yu. P.-404
Teterin, E. G.-312
Tikhomirova, G. S.-737
Tikhonova, L. I.-483
Tolmachev, Yu. M.-163, 722, 804
Tolstoi, N. S.-95
Torgov, V. G.-503
Toropova, M. A.-120, 176, 385
Trunov, V. K.-379
Tsaletka, R.-415, 515, 520, 530
Tsarenko, A. F.-578
Tsaritsyna, L. G.-167, 692, 698
Tserkovnitskaya, I. A.-873
Tsinober, L. I.-107
Tsirlin, I. I.-327, 332, 443
Tsvigunov, A. N.-768, 813

U

Ukraintseva, É. A.-629
Ul'yanov, V. S.-41

V

Vashman, A. A.-9
Vasil'ev, I. Yu.-116
Vasil'ev, V. Ya.-674
Vdovenko, V. M.-183, 607, 612, 616, 631, 726, 729
Vekhvilyainen, R. M.-753
Vesnovskii, S. P.-379
Vilenskii, V. D.-834
Vil'gel'mova, L.-371
Vinetskaya, T. N.-716
Vinogradova, V. G.-29
Voden, V. G.-875, 877
Volchenkova, N. G.-433
Volkov, V. V.-143, 447
Voronetskaya, E. V.-312
Vysokoostrovskaya N. B.-110

Y

Yagodin, G. A.-626
Yagodinskaya, N. N.-356
Yakovleva, G. V.-170
Yakushev, M. F.-753, 840, 846
Yashkichev, V. I.-642, 881
Yushchenko, A. S.-54
Yutlandov, I. A.-377

Z

Zaborenko, K. B.-137
Zaitsev, B. A.-830
Zaitseva, N. G.-125
Zakharin, V. S.-541
Zakhuataev, B. B.-530
Zemlyanukhin, V. I.-541
Zhikharev, M. I.-731
Zhinka, L.-740
Zhirnov, Yu. P.-731
Zhivopistsev, V. P.-591
Zhuravlev, V. E.-862
Zhurenkov, É. M.-89
Zubova, E. V.-813
Zvara, I.-530
Zvarova, T. S.-530

SOVIET RADIOCHEMISTRY
Volume 12, Numbers 1-6, 1970
(A translation of Radiokhimiya)

Volume 12, Number 1 January-February, 1970

	Engl./Russ.	
Calculation of the Isotherms of Extraction Considering the Change in the Volumes of Phases – A. M. Rozen and Yu. V. Reshet'ko	1	3
The Formation of Radicals in the Low-Temperature Radiolysis of Tributyl Phosphate and Certain Organophosphorus Extraction Reagents – A. A. Vashman and Yu. I. Savel'ev	9	12
Extraction of Nitric Acid and Zirconium by Tributyl Phosphate in the Presence of Lithium Chloride – I. A. Apraksin, S. S. Korovin, A. M. Reznik, and A. M. Rozen	14	17
Study of the Rate of Extraction in Systems with Tributyl Phosphate. II. Extraction of $UO_2(NO_3)_2$ – M. F. Pushlenkov and N. N. Shchepetil'nikov	20	23
Extraction of Titanium and Vanadium by Oxygen-Containing Solvents – Yu. G. Sevast'yanov, B. Z. Iofa, A. N. Nesmeyanov, and V. G. Vinogradova	29	33
Some Principles of the Influence of the Nature of the Diluent on the Extraction of Acids by Amines and Their Salts during Extraction According to Reactions of Addition, Neutralization, and Anion Exchange – V. S. Shmidt and É. A. Mezhov	34	38
Determination of the values of the Dimerization, Distribution, and Acid Dissociation Constants of Dialkylphosphoric Acid and the Constants of Association with Tributyl Phosphate and Trioctylphosphine Oxide in Various Diluents – V. S. Ul'yanov and R. A. Sviridova	41	47
Extraction of Complex Acids by Oxygen-Containing Solvents. VII. Extraction of Polonium (II and IV) from Solutions of Hydroiodic Acid – B. Z. Iofa and A. S. Yushchenko	54	65
Study of Extraction by Organophosphorus Compounds with the Aid of the Nuclear Magnetic Resonance of Phosphorus. I. Influence of Solvation – A. M. Rozen, P. M. Borodin, Z. I. Nikolotova, E. N. Sventitskii, and V. I. Chizhik	58	69
Stability of Solutions of Amines to Stratification into Two Phases – V. I. Zemlyanukhin and B. S. Zakharkin	64	76
Solvation of Scandium Nitrate by Ethylene-bis-Dioctylphosphine Oxide – V. F. Smirnov and V. I. Nikonov	71	85
On the Existence of a "Mixed" Hydroxoacetate Complex of Uranyl in Aqueous Acetate–Nitrate Solutions – B. P. Nikol'skii and V. B. Kolychev	75	89
Kinetics of the Spontaneous Oxidation of Trivalent Uranium in Chloride Solutions – V. F. Peretrukhin, N. N. Krot, and A. D. Gel'man	81	96
Influence of Anions on the Kinetics of the Spontaneous Oxidation of Trivalent Uranium in Aqueous Solutions – V. F. Peretrukhin, N. N. Krot, and A. D. Gel'man	85	101
Determination of the Composition and Instability Constants of Oxalate Complexes of Niobium and Tantalum by the Solubility Method – É. M. Zhurenkov and D. N. Pobezhimovskaya	89	105
Apparatus for the Chromatographic Separation of Elements with High Radioactivity – N. A. Lebedev and N. S. Tolstoi	95	112

	Engl.	Russ.
Investigation of the Possibility of Creating a Substoichiometric Method of Determining Trace Amounts of Thorium – A. G. Remov and É. V. Sobotovich	102	119
Kinetics of the Formation of Radiation Centers of Smoky Color in Synthetic Quartz – M. I. Samoilovich, L. A. Gordienko, and L. I. Tsinober	107	124
Influence of Internal α-Irradiation on the Characteristics of the Anion-Exchange Resin AV-23M – V. I. Paramonova, N. B. Vysokoostrovskaya, V. M. Nikolaev, S. V. Osipov, and V. I. Frolov	110	127
Neutron Activation Determination of Trace Impurities in Special Purity Germanium – G. N. Razumova, I. D. Shuba, and I. Yu. Vasil'ev	116	133
Study of Chemical Changes in Processes of Electron Capture of ^{125}Xe in Certain Inorganic Systems – V. I. Kuzin, V. D. Nefedov, Yu. V. Norseev, M. A. Toropova, V. A. Khalkin, and P. Groz	120	137
Chemical Forms of Stabilization of Atoms of Radioactive Rhenium Formed in the Irradiation of Certain Inorganic Rhenium Compounds by 600-MeV Protons – N. G. Zaitseva and E. Ianovich	125	143
Kinetics of the Accumulation of Labeled Parent Substances in the Irradiation of Organic Compounds with Ionic Fluxes – L. P. Firsova, A. B. Khar'ono, and Yu. S. Kuklin	130	148
The Use of the Emanation Method to Evaluate the Reactivity of Ferric Oxide with Various Chemical and thermal Prehistories – V. Balek, S. D. Baikov, and K. B. Zaborenko	137	156
Radiochemical Composition of Targets of ^{54}Fe, Subjected to Neutron Irradiation for the Accumulation of Macroquantitites of ^{55}Fe – V. V. Volkov and V. K. Sokolova	143	163
BRIEF COMMUNICATIONS		
Investigation of Complex Formation by the Method of Dialysis. V. Study of the Hydrolysis of Ruthenium Nitrosonitrate by the Method of Dialysis – B. P. Nikol'skii, V. I. Andreev, and R. I. Lyubtsev	152	173
Stability of Complexes of Thorium and Uranium (IV) with Anions of Dicarboxylic Acids – S. A. Merkusheva, V. N. Kumok, N. A. Skorik, and V. V. Serebrennikov	155	175
Standard Enthalpy of the Formation of Uranium Trifluoride – E. I. Khanaev and L. A. Kripin	158	178
The Use of Synergism in the Substoichiometric Analysis of Thorium – A. G. Remov and É. V. Sobotovich	161	182
Some Peculiarities of the Reactions of Thermal Dissociation of Solid Oxides – G. V. Malinin and Yu. M. Tolmachev	163	183
Isolation of Selenium without a Carrier from Complex Mixtures – L. N. Moskvin and L. G. Tsaritsyna	167	187
Radiochemical Determination of the Specific Activity of Antimony in Various Objects – I. N. Maksimov, L. N. Sysoeva, and G. V. Yakovleva	170	189
Study of the Isotopic Exchange of the Peripheral Atoms in Haloderivatives of Aromatic Tellurium Compounds – V. D. Nefedov, E. N. Sinotova, and A. N. Sarbash	173	192
Reactions with Benzene of ^{125}I and ^{211}At, Arising in K-Capture by the Noble Gases – V. D. Nefedov, M. A. Toropova, V. A. Khalkin, Yu. V. Norseev, and V. I. Kuzin	176	194
Cementation of Trace Amounts of Polonium with Mercury – V. P. Gladyshev, R. Sh. Enikeev, and M. K. Nauryzbaev	178	195
OBITUARY		
Aleksandr Il'ich Brodskii	181	198

Engl./Russ.

Volume 12, Number 2 March-April, 1970

Lenin the Great Scientist	183	201
The Possibility of Employing Radioactive Isotopes in Radioisotope Energetics – V. M. Vdovenko	186	204
The Heptavalent State of the Transuranic Elements. VII. Stability of Neptunium (VII) in Acid Solutions – V. P. Shilov, N. N. Krot, and A. D. Gel'man	201	222
The Heptavalent State of the Transuranic Elements. VIII. Study of the Stability of Plutonium (VII) in Alkaline Solutions – Yu. A. Komkov and N. N. Krot	206	227
The Heptavalent State of the Transuranic Elements. IX. New Compounds of Neptunium (VII) – M. P. Mefod'eva, N N. Krot, and A. D. Gel'man	210	232
Kinetics of the Ozone Oxidation of Neptunium (VI) to Neptunium (VII) in Alkaline Solutions – E. A. Shashukov and A. A. Kozlov	215	237
Ratner Formula and Some New Expressions – Yu. V. Egorov	220	243
Colloidal State of $Pu^{(IV)}$ in Aqueous Solutions – L. D. Sheidina and E. N. Kovarskaya	229	253
Complex Formation by Promethium – N. E. Brezhneva, V. I. Levin, M. G. Ratnikova, and V. S. Novoselov	234	259
An Investigation of Complex Formation in Solution by Determining the Charge of Anionic Complexes by the Ion-Exchange Method – G. I. Petrzhak, L. N. Stepanova, and L. V. Karago	240	266
Solubility of Complex Salts of Hexanitratothoreates of Quaternary Ammonium Bases in Solutions of Nitric Acid. III. Dependence of the Solubility on the Nitric Acid Concentration – B. P. Nikol'skii, G. S. Markov, and M. V. Posvol'skii	246	272
Oxalate Complexes of Thorium – V. I. Grebenshchikova, R. V. Bryzgalova, and Yu. M. Rogozin	252	279
On the Solubility of Thorium Oxalate in Mixtures of Nitric and Oxalic Acids – R. V. Bryzgalova, Yu. M. Rogozin, and I. V. Chernitskaya	259	286
Distribution of Metal Ions in a System with a Polymerizing Extractant – E. V. Komarov and V. N. Komarov	264	291
Polymerization of n-Octyl Dihydrogen Phosphate in Nonpolar Solvents – E. V. Komarov and V. N. Komarov	269	297
Model for Describing the Extraction of Monobasic Acids with Alkylammonium Salts – E. V. Komarov and V. N. Komarov	274	302
Types of Concentration Dependences of the Distribution Coefficients of Salts and Metal Ions during Their Extraction by Associated Reagents – E. V. Komarov	278	306
Molecular Theories of Solutions and the Extraction of Metals and Acids by Associating Reagents – E. V. Komarov	283	312
Extraction of Microquantities of Yttrium with Di-p-Cresylphosphoric Acid – V. V. Fomin and S. A. Potapova	288	318
Results of Systematic Research on Extraction of Rare-Earth, Thorium, and Uranium Nitrates with Undiluted Tributyl Phosphate – A. V. Nikolaev, A. I. Ryabinin, and Yu. A. Afanas'ev	296	326
Investigation of the Extraction Properties of Amino-Substituted Phosphine Oxides and Their Derivatives – V. N. Laskorin, L. A. Fedorova, N. P. Stupin, M. I. Kabachnik, T. Ya. Medved', and Yu. M. Polikarpov	303	335
Extraction of Water by Tributyl Phosphate and Its Solutions in Diluents – A. M. Rozen, L. P. Khorkhorina, G. D. Agashkina, E. G. Teterin, A. N. Mal'tseva, and E. V. Voronetskaya	312	345
The Extracting Ability of Sulfoxides – A. M. Rozen, Yu. I. Murinov, and Yu. E. Nikitin	322	355
Induced Reactions in Radiochemistry. II. Catalysts of the Induced Oxidation of Plutonium by Chromium (VI) – M. V. Posvol'skii and I. I. Tsirlin	327	361
Induced Reactions in Radiochemistry. III. Influence of Radiolysis Products on the Course of Induced Reactions – M. V. Posvol'skii, I. I. Tsirlin, and V. A. Kochnov	332	367

The Question of the Study of the Adsorption of Anions from Electrolytes on Germanium and Silicon – V. S. Sotnikov, N. I. Naumenko, and V. S. Polyakova 338 373
Isolation of Americium and Curium on Metals by Drop Electrolysis as a Method for Obtaining Spectrometric α-Sources – V. M. Surin, G. D. Smirnova, A. I. Stabrovskii, and S. P. Vesnovskii 379 344

BRIEF COMMUNICATIONS

The Use of Mixed-Complex Compounds for Isolation of Radioisotopes – N. P. Rudenko and V. O. Kordyukevich..... 352 389
Investigation of the Formation of Complexes of $Th^{(IV)}$ with Acetic Acid by the pH-Potentiometric Titration Method – G. M. Sergeev, L. G. Astrashkova, and N. N. Yagodinskaya..... 356 392
The Question of the Extraction of H_2SO_4 and $U^{(VI)}$ by Solutions of Trioctylamine – M. G. Kuzina and A. A. Lipovskii 358 393
Some Questions of the Extraction of Cobalt (II) by Di-(2-Ethylhexyl)phosphate – V. S. Smelov and V. V. Drobysh..... 361 396
The Influence of Steric Hindrance of the Extraction Properties and Selectivity of Amines – V. S. Shmidt, V. N. Shesterikov, and É. A. Mezhov..... 364 399
A Rapid Method for the Isolation of Rare-Earth and Transplutonium Elements from Uranium Targets Irradiated with Heavy Ions – V. Kush, Ya. Mikul'ski, and Z. Shcheglovski ... 367 401
The Question of the Purification of Anhydrous Uranium Trichloride by Vacuum Sublimation – L. A. Tarasova, V. V. Rachev, and A. I. Pavlova-Verevkina..... 371 405
The Preparation of Carrier-Free ^{47}Ca – L. Vil'gel'mova, L. N. Nikityuk, and B. N. Rybakov 374 407
Relative Yield of Xenon Isotopes from 680 MeV Proton Irradiation of Barium – L. K. Levskii, A. N. Murin, and I. A. Yutlandov..... 377 409
Some New Data on Binary Sodium and Thorium Tungstates – N. N. Bushuev and V. K. Trunov 379 411

LETTERS TO THE EDITOR

Peculiarities of Synergism in the System $HNO_3 – UO_2(NO_3)_2$ – D2EHP – Tributyl Phosphate – V. L. Bykhovtsov..... 381 412
Separation of ^{99}Mo from Fission Products – R. F. Brigevich and R. A. Kuznetsov..... 383 413
Determination of the Boiling Point of Astatobenzene – V. I. Kuzin, V. D. Nefedov, Yu. V. Norseev, M. A. Toropova, and V. A. Khalkin..... 385 414

Volume 12, Number 3 May-June, 1970

Some Principles of the Distribution of a Trace Impurity in Crystal Hydrates of Sodium Metasilicate. I. Investigation of Heterogeneous Isotopic Exchange of Sodium Metasilicate Nonahydrate – S. G. Babayan and A. M. Arutyunyan 387 417
Some Principles of the Distribution of a Trace Impurity in Crystal Hydrates of Sodium Metasilicate. II. Investigation of Heterogeneous Isotopic Exchange of Sodium, Deuterium, and Tritium in Saturated Solutions with Stabilized Crystals of $Na_2SiO_3 \cdot 9H_2O$ – S. G. Babayan and A. M. Arutyunyan..... 393 424
Comparison of the Influence of the Solvent on the Process of Cocrystallization in Aqueous and Organic Solutions and in Salt Melts – A. I. Kryukova, L. G. Pakhomov, and I. A. Korshunov..... 398 429
Investigation of the Behavior of Radioactive Elements in Sorption Systems with Humus Substances. I. Study of Humus Substances by the Method of Infared Spectroscopy – V. N. Shchebetkovskii, Yu. P. Tarlakov, and A. G. Khoroshailov..... 404 435
Investigation of the Behavior of Radioactive Elements in Sorption Systems with Humus Substances. II. Sorption of ^{91}Y by Activated Charcoal from Aqueous Solutions in the Presence of Humic Acids – V. N. Shchebetkovskii and A. G. Khoroshailov .. 410 442

	Engl./Russ.	
Adsorption of Readily Hydrolyzed Elements on Silica Gel. I. Adsorption of Zirconium and Hafnium from Solutions of Mineral Acids – R. Tsaletka	415	448
A New Method for Describing the Distribution of Metal Ions in Extraction Systems with Monoaryl- and Monoalkylphosphoric Acids – E. V. Komarov, V. N. Komarov, and M. F. Pushlenkov	422	455
Kinetics of the Extraction of Americium (III) from Perchloric Acid Solutions by Di-2-Ethylhexylphosphoric Acid in n-Decane – S. M. Karpacheva and L. V. Ilozheva	427	460
Mechanism of the Extraction of Tetravalent Cerium by Ethylhexylphosphoric Acid from Nitric Acid Solution – A. I. Mikhailichenko, N. G. Volchenkova, and R. M. Pimenova	433	466
The Heptavalent State of Transuranium Elements. IX. New Methods of Producing Neptunium (VI) in Alkaline Media — N. N. Krot, M. P. Mefod'eva, V. P. Shilov, and A. D. Gel'man	438	471
Induced Reactions in Radiochemistry. IV. Criterion of the Catalytic Effect in Induced Reactions – M. V. Posvol'skii and I. I. Tsirlin	443	477
Calculation of the Accumulation of Isotopes of the Transplutonium Elements in the Neutron Irradiation of Various Starting Materials – A. V. Nikolaev, V. K. Sokolova, and V. V. Volkov	447	481
Radiochemical Determination of the Yields of Rare-Earth Elements in the Fission of ^{239}Pu and ^{241}Pu by Slow Neutrons. I. Yield of Isotopes of the Rare-Earth Elements with Half-Lives Less than Ten Days – N. V. Skovorodkin, A. V. Sorokina, S. S. Bugorkov, A. S. Krivokhatskii, and K. A. Petrzhak	453	487
Radiochemical Determination of the Yields of Rare-Earth Elements in the Fission of ^{239}Pu and ^{241}Pu by Slow Neutrons. II. Yields of Isotopes of the Rare-Earth Elements with Half-Lives of More Than Ten Days – N. V. Skovorodkin, A. V. Sorkina, S. S. Bugorkov, A. S. Krivokhatskii, and K. A. Petrzhak	458	492
Isotopic Exchange of Bromine in the Bromide Analog of Zeise's Salt – A. A. Grinberg and M. A. Kuz'mina	461	496
Use of the Method of Thin-Layer Chromatography for the Separation of Xenon Trioxide from Oxygen-Containing Iodine Compounds – I. S. Kirin, V. K. Isupov, and Yu. K. Gusev	465	500
A Generator of Gallium-68 – V. I. Levin and S. V. Sokolov	469	505
BRIEF COMMUNICATIONS		
Study of the Extraction of Organophosphorus Compounds with the Aid of the NMR of Phosphorus and Hydrogen. II. Influence of Anions – A. M. Rozen, P. M. Borodin, Yu. I. Mitchenko, and Z. I. Nikolotova	473	510
Extraction Capacity of Sulfoxides. II. Thermodynamics of Extraction – A. M. Rozen, Yu. I. Murinov, and Yu. E. Nikitin	477	513
Extraction Capacity of Sulfoxides. III. Extraction of Thorium and Zirconium Nitrates and Tellurium Chloride – A. M. Rozen, Yu. I. Murinov, and Yu. E. Nikitin	480	516
Investigation of the Complex Formation of Certain Alkaline-Earth and Rare-Earth Elements with Ethylenediamine-N, N, N', N'-Tetramethylphosphonic Acid – L. I. Tikhonova	483	519
Investigation of Uranates of the Alkali Metals – L. M. Kovba	486	522
Activity Coefficients of Uranyl Nitrate in Aqueous Solution in the Temperature Interval 10-50°C – E. V. Komarov, M. F. Pushlenkov, and L. E. Shpunt	488	523
Measurement of the Saturated Vapor Pressure of Neptunium Tetrafluoride – É. G. Chudinov and D. Ya. Choporov	490	525
Isolation of Neptunium (IV) with Hydrogen Peroxide – A. [illegible]. Chaikhorskii, L. P. Murav'eva, and Yu. A. Barbanel'	493	528
Isolation of Yttrium-88 without a Carrier from a Zirconium Target by the Method of Adsorption of Teflon – V. I. Levin, L. N. Kurchatova, and A. B. Malinin	495	529

Engl./Russ.

Photoactivation Determination of Oxygen in Compounds with Iodine – R. A. Kuznetsov, Yu. S. Grushko, and L. A. Kotel'nikov 498 531
Neutron Activation Determination of Copper in Rocks – G. G. Glukhov and É. N. Gil'bert 501 533
Radioactivation Determination of Tantalum in Rocks and Ores – G. G. Glukhov, É. N. Gil'bert, and V. G. Torgov 503 534
Conference on the Chemistry of Extraction – B. Ya. Spivakov and O. M. Petrukhin 505 536

LETTERS TO THE EDITOR
Synergism in the Extraction of Thorium from Nitric Acid Solutions with an Equimolar Mixture of D2EHPA–TBP in Kerosene – V. L. Bykhovtsov 509 539

Volume 12, Number 4 July-August, 1970

Sorption of Strontium Ions on NaX, NaA, and CaA Zeolites – N. E. Brezhneva, V. D. Dement'ev, Yu. I. Kapshaninov, and I. B. Popov 511 545
Adsorption of Readily Hydrolyzed Elements on Silica Gel. II. Adsorption of Zirconium and Hafnium on Silicone-Coated Silica Gel from Solutions of Mineral Acids – R. Tsaletka 515 549
Adsorption of Readily Hydrolyzed Elements on Silica Gel. III. The Adsorption of Niobium from Solutions of Mineral Acids – R. Tsaletka 520 554
Adsorption of Readily Hydrolyzed Elements on Silica Gel. IV. Adsorption of Tantalum from Solutions of Mineral Acids – R. Tsaletka 524 558
Experiments on the Chemistry of Element 104 – Kurchatovium. V. The Adsorption of Kurchatovium Chloride from a Gas Flux on the Surface of Glass and Potassium Chloride – I. Zvara, Yu. T. Chuburkov, V. Z. Belov, G. V. Buklanov, B. B. Zakhvataev, T. S. Zvarova, O. D. Maslov, R. Tsaletka, and M. R. Shalaevskii 530 565
Coprecipitation of Strontium, Barium, and Radium with Calcium Hydroxyapatite – D. K. Popov, A. I. Mikhailova, Yu. A. Dovedov, and L. N. Basalaeva 537 573
Extraction of Neptunium (IV) by Amines from Nitric Acid Solutions – V. S. Zakharkin, V. I. Zemlyanukhin, and V. B. Shevchenko 541 577
Dependence of the Extraction Capacity of Amines on Their Ionization Potentials – V. M. Makarov 547 584
Influence of the Nature of the Diluent and the Structure of the Amine on the Selectivity of Extraction – V. S. Shmidt, É. A. Mezhov, and V. N. Shesterikov 552 590
The Extraction of Mineral Acids by Tri-n-octylphosphine Oxide – A. I. Mikhailichenko 556 594
Temperature Coefficients and Changes in the Interionic Distances of Crystalline Compounds of Plutonium at Various Temperatures – G. A. Krestov and N. V. Krestova 562 600
Spectrophotometric Investigation of Nitrate, Chloride, and Bromide Complexes of the Uranyl Ion in Acetone Solutions – N. S. Poluéktov and L. M. Burtnenko 568 607
Radiochemical Study of Fission Products of Uranium Irradiated with Accelerated Argon Ions – B. A. Gvozdev, E. Gyrd, S. Ionesku, K. Sabéu, and S. Spiridon 573 612
Production of Metallic Technetium and Physical Investigations of It – V. I. Spitsyn, A. F. Kuzina, A. F. Tsarenko, A. A. Oblova, O. A. Balakhovskii, P. N. Kodochigov, M. P. Glazunov, and I. V. Kaimin 578 617
Chromatographic Separation of Elements of the First Group on Silica Gel – N. S. Mal'tseva and Z. Sheglovskii 582 622
Investigation of the Forms of Stabilization of Sulfur-35 and Phosphorus-32 in Carbon Tetrachloride, Irradiated on a Reactor – E. P. Petryaev, G. D. Solov'eva, and V. P. Mironov 586 626

Concentration of Waste Products of Radiochemical Investigations and Purification of Sewage from Radioactive Elements with the Aid of Diantipyrylmethane – V. P. Zhivopistsev, V. I. Petrov, and I. N. Ponosov 591 631
American Investigations in the Field of the Far Actinides – V. I. Spitsyn 595 635

BRIEF COMMUNICATIONS
Mechanism of the Distribution of Mineral Acids between Aqueous Solutions and the Diisoamyl Ester of Methylphosphinic Acid (DAMP). II. Extraction of Hydrofluoric Acid – V. M. Vdovenko, L. S. Bulyanitsa, G. P. Savoskina, and E. N. Sventitskii 607 650
Mechanism of the Distribution of Mineral Acids between Aqueous Solutions and the Diisoamyl Ester of Methylphosphinic Acid (DAMP). III. Extraction of Hydrohalic Acids with DAMP – V. M. Vdovenko, L. S. Bulyanitsa, and G. P. Savoskina 612 654
Mechanism of the Distribution of Mineral Acids between Aqueous Solutions and the Diisoamyl Ester of Methylphosphinic Acid (DAMP). IV Extraction of Nitric Acid – V. M. Vdovenko, L. S. Bulyanitsa, and G. P. Savoskina 616 658
Extraction Separation of the Alkaline Earth Elements from the Rare Earth Elements – F. P. Gorebenko, E. D. Kuchkina, and M. I. Olevinskii 620 661
Rate of Extraction of Zirconium by Di-2-ethylhexylphosphoric Acid from Nitrate Media – G. A. Yagodin and V. V. Tarasov..... 623 664
Evaluation of the Rate of Interaction of Zirconium with D2EHPA – G. A. Yagodin and V. V. Tarasov..... 626 666
Thermodynamic Investigation of Crystal Hydrates of Nitrates of the Lanthanides. III. Hexahydrates of Nitrates of Praseodymium, Samarium, and Europium – Yu. A. Afanas'ev, É. A. Ukraintseva, and G. V. Shevelev..... 629 668
Solubility of Radon in D_2O and Structure of Aqueous Solutions of the Noble Gases – V. M. Vdovenko, Yu. V. Gurikov, and E. K. Legin..... 631 670
Determination of Hafnium in Zirconium by Radiochemical Methods. II. Use of the Method of Radiochemical Correction with Substoichiometric Precipitation of Hafnium in the Form of the Phosphate – V. I. Shamaev and G. K. Garbauskas 634 673
Radiochromatographic Method of Analyzing $C_2 - C_8$ Aliphatic Acids and Isomeric Decanones Labeled with Carbon-14 – A. M. Syroezhko, N. T. Selivanov, V. M. Potekhin, V. A. Proskuryakov, and A. P. Musakin 637 675
Self-Diffusion of $^{131}I^-$ in Aqueous Solutions of Lithium, Sodium, Potassium, Cesium, and Ammonium Chlorides – V. I. Yashkichev, V. V. Goncharov, and V. G. Markova 642 680
Influence of the Ionic Strength on the Effectiveness of the Deactivation of Solutions from Iron-55 – B. S. Pavlov-Verevkin 645 682

LETTERS TO THE EDITOR
Extraction Properties of an Equimolar Mixture of D2EHPA – TBP in Kerosene – V. L. Bykhovtsov and T. Ya. Zimina 648 686
Formation of a Complex of Europium with Caprinohydroxamic Acid – M. E. Obukhova, V. G. Voden, and M. F. Pushlenkov 650 687

Volume 12, Number 5 September-October, 1970

Academician B. P. Nikol'skii (On His Seventieth Birthday) 653 689
Heptavalent State of the Transuranium Elements. XI. The Interaction of Plutonium (VII) with Certain Reducing Agents in Alkaline Solutions – Yu. A. Komkov, N. N. Krot, and A. D. Gel'man 656 692
Supplementary Data on the Oxidative Properties of Neptunium (VII) in Alkaline Solutions – V. P. Shilov, N. N. Krot, and A. D. Gel'man..... 661 697

Engl./Russ.

Use of the Method of Partial Recrystallization to Determine the Coefficient of Crystallization in the Case of Heterogeneous Distribution of the Microimpurity. I. Derivation of the Equation – V. I. Grebenshchikova, R. V. Bryzgalova, and Yu. M. Rogozin 664 700
Trapping of Europium by a Thorium Oxalate Precipitate – V. I. Grebenshchikova, R. V. Bryzgalova, and Yu. M. Rogozin 669 705
Spectrophotometric Study of Complex Formation and Solvation of Ions of the Actinide Elements. I. The "Differential-Spectra" Method – A. G. Rykov and V. Ya. Vasil'ev 675 711
Spectrophotometric Study of Complex Formation and Solvation of Ions of the Actinide Elements. II. Uranium (IV) in Nitrate Solutions – A. G. Rykov and V. Ya. Vasil'ev 681 717
Determination of the Stability Constants of Complex Compounds of Californium with Ethylenediaminetetraacetic and 1,2-Diaminocyclohexanetetraacetic Acids by an Electromigration Method – A. V. Stepanov, A. M. Maksimova, E. M. Pazukhin, and L. M. Belov 690 727
Continuous Chromatographic Separation of a Multicomponent Mixture of Substances in Liquid–Liquid Partition Chromatography. II. Operation of the Device and Position of the Maxima of the Effluent Curves – L. N. Moskvin and L. G. Tsaritsyna 693 730
Continuous Chromatographic Separation of a Multicomponent Mixture of Substances in Liquid–Liquid Partition Chromatography. III. Blurring of the Zones of the Substances to be Separated – L. N. Moskvin and L. G. Tsaritsyna 699 737

BRIEF COMMUNICATIONS

Directed Crystallization of Solid Solutions of $NaNO_3$–KNO_3 with Impurities of Rubidium and Cesium Nitrates – A. N. Kirgintsev, V. I. Kosyakov, and A. S. Aloi 705 743
Equilibrium Distribution Coefficients of Microquantities of Cesium in the Crystallization of Certain Salts of Rubidium from Aqueous Solutions – A. N. Kirgintsev and B. M. Shavinskii 708 746
Influence of the Nature of the Diluent on Anion- and Cation-Exchange Extraction – V. S. Shmidt, V. S. Smelov, V. N. Shesterikov, and V. V. Drobysh 711 748
Extraction of Complex Acids by Oxygen-Containing Solvents. XVIII. Influence of Temperature on the Extraction of Indium (III) by Methyl Butyl Ketone – B. Z. Iofa, A. A. Abramov, and B. N. Markov 714 751
Thermal Effects in the Extraction of Certain Acids with Tri-n-Octylamine – Yu. G. Frolov, T. N. Vinetskaya, and V. V. Sergievskii 717 753
Use of the Differential-Spectra Method to Study Equilibria in Systems with Several Complexes. I. Fundamentals of the Method – Yu. A. Barbanel' 720 756
Reduction of U_3O_8 to U_2O_5 by an Aqueous Solution of $U^{(IV)}$ Sulfate – É. A. Moskal'kova and Yu. M. Tolmachev 723 758
Production and Study of Some Physicochemical Properties of $UOF(OH)\cdot 0.5H_2O$ – V. M. Vdovenko, G. A. Romanov, G. V. Malinin, and L. V. Solntseva 727 762
Heat of Formation of $UOF(OH)\cdot 0.5H_2O$ – V. M. Vdovenko, G. A. Romanov, and L. V. Solntseva 730 764
Liquid–Vapor Equilibrium in the System H_2O–HNO_3–$UO_2(NO_3)_2$ at Pressures of 180, 360, and 720 mm Hg – A. N. Efimov, M. I. Zhikharev, and Yu. P. Zhirnov ... 732 766
Thermodynamic Properties of Liquid Alloys of Uranium with Certain Rare Earth Metals – A. P. Bayanov 735 768
Separation of Transplutonium and Rare Earth Elements on an Anion-Exchange Resin with Concentrated Solutions of LiCl in the Presence of Alcohols – L. I. Guseva and G. S. Tikhomirova 738 771
Possibility of Separation of Microquantities of Rubidium from Macroquantities of Strontium – L. Zhinka and L. Sirtesh 741 774

Engl./Russ.

An Extraction-Chromatographic Method of Isolating Polonium from a Proton-Irradiated Target of Bismuth Oxide – Kh. Raichev and V. Khalkin 745 778
The Formation of ^{67}Cu According to the Reaction $^{68}Zn(\gamma, p)$ on a Retarded Beam of an Electron Accelerator with an Energy of 25 MeV – A. B. Malinin, L. N. Kurchatova, A. M. Litvitskii, M. Abdukayumov, and V. I. Levin 748 780
Production of Radioactive Isotopes of Tellurium and Tin without a Carrier from Deuteron-Irradiated Antimony – B. Z. Iofa, N. A. Novikova, Yu. G. Sevost'yanov, and S. I. Semenov 752 782
The State of ^{137}Cs and ^{90}Sr in Sewage Solutions in the Presence of Synthetic Detergents and Soaps – V. P. Shvedov, M. F. Yakushev, R. M. Vekhvilyainen, and A. A. Permyakov. 754 784
Isotopic Analysis of Lithium and Boron According to γ-Quanta Accompanying the Nuclear Reactions $^{7}Li(\alpha, \alpha')^{7}*Li$, $^{10}B(\alpha, p)^{13}*C$ – Yu. A. Dzhemard'yan, G. I. Mikhailov, and L. P. Starchik 757 787
The Scale of a Logarithmic Slide Rule for Determining the Change in the Activities of Radioactive Isotopes in an Unlimited Range – V. Ya. Gavrik 760 789

LETTERS TO THE EDITOR
The Production of Concentrated Solutions of Neptunium (VII) – V. I. Blokhin, N. N. Krot, and A. D. Gel'man. 764 792
Kinetics of the Extraction of Trivalent Iron from Nitric Acid Solutions of Di-(2-Ethylhexyl)-Phosphoric Acid in Kerosene – V. L. Bykhovtsov 765 792
The Isolation of Neptunium (IV) with Hydrazine – A. A. Chaikhorskii 767 794
The Existence of the Phase p-U_3O_8 – A. N. Tsvigunov and L. M. Kovba. 769 795
A Generator of Gallium-68 – B. Z. Iofa and L. N. Makagonova. 770 796

Volume 12, Number 6 November-December, 1970

Some Principles of D. I. Mendeleev's Periodic System and the Prediction of the Chemical Properties of Ultraheavy Elements – A. A. Chaikhorskii. 771 801
Influence of the Nature of the Solvent on the Formation of Mixed Crystals of Promethium with Molybdates of the Alkaline Earth Metals from a Melt. I. Cocrystallization of Promethium with Strontium Molybdate – A. V. Kolysh, A. I. Kryukova, and I. A. Korshunov. 778 808
Influence of the Nature of the Solvent on the Formation of Mixed Crystals of Promethium with Molybdates of the Alkaline Earth Metals from a Melt. II. Cocrystallization of Promethium with Calcium Molybdate – A. V. Kolysh, A. I. Kryukova, and I. A. Korshunov 783 814
The Use of the Method of Partial Recrystallization to Determine the Coefficient of Crystallization λ in the Case of Heterogeneous Distribution of a Microimpurity. II. The System $Th(C_2O_4)_2 \cdot 6H_2O - Eu^{(III)} (Pu^{(IV)}) - (HNO_3 + H_2C_2O_4 + H_2O)$ – V. I. Grebenshchikova, R. V. Bryzgalova, and Yu. M. Rogozin . . 788 818
The Sorption of Europium by the Surface of a Thorium Oxalate Precipitate – V. I. Grebenshchikova, R. V. Bryzgalova, Yu. M. Rogozin, and I. V. Chernitskaya 793 824
Extraction of Niobium and Tantalum and Determination of Protactinium Using 1-Phenyl-3-Methyl-4-Benzoyl-5-Pyrazolone – B. F. Myasoedov, N. P. Molochnikova, and P. N. Palei 798 829
The Interaction of Uranium Octoxide with Acids – N. I. Blinova, L. P. Rodionova, and Yu. M. Tolmachev 804 835

	Engl.	Russ.
Oxidation of U_2O_5 at Temperatures Below 100°C – V. V. Osipova	808	839
Study of the Polymorphism of Uranium Octoxide and Trioxide under High Pressure – A. N. Tsvigunov, L. M. Kovba, O. V. Kudin, and E. V. Zubova	813	843
Determination of Tetravalent Plutonium with Certain 2,7-Bis-Azo-Derivatives of Chromotropic Acid Containing an o,o'-Dihydroxyazo Group – M. S. Milyukova, S. B. Savvin, L. A. Okhanova, and L. V. Ryzhova	817	847
The Mössbauer Effect in Neptunium Compounds – B. M. Aleksandrov, A. V. Kalyamin, A. S. Krivokhatskii, B. G. Lur'e, A. N. Murin, and Yu. F. Romanov	822	852
The Polarographic Reduction of Trivalent Americium in Acetonitrile Medium – B. F. Myasoedov and K. Myuzikas	826	856
Study of the Hydrolysis of Nitrosonitrate Complexes of Ruthenium by the Method of High Voltage Electrophoresis – B. A. Zaitsev and T. S. Shevelkina	830	860
The Determination of Radium-226 in Soils by an α-Scintillation Method – V. D. Vilenskii and Z. V. Eremenko	834	864
The Use of Electrophoresis, Electrocoagulations, and Electroflotation for the Purification of Radioactive Waters – V. P. Shvedov and M. F. Yakushev	840	871
The Use of Nickel Ferrocyanide as a Collector in the Purification of Radioactive Solutions from Cesium-137 and Strontium-90 by the Method of Electroflotation – V. P. Shvedov and M. F. Yakushev	846	879
Some Problems of the Purification of Radioactive Sewage by Evaporation – S. G. Strizhov	850	879
BRIEF COMMUNICATIONS		
More About One Principle in the Directed Crystallization of Salt Melts – A. N. Kirgintsev and V. A. Isaenko	854	883
Coprecipitation of Strontium with a Prototype of Bone Mineral, Calcium Hydroxylapatite – D. K. Popov, A. I. Mikhailova, and L. N. Basalaeva	856	885
Coprecipitation of Barium with a Prototype of Bone Mineral, Calcium Hydroxylapatite – A. I. Mikhailova	859	887
Cocrystallization of Tetraphenyltin Labeled with Tin-113 with the Complete Phenyl Derivatives of Elements of Group IV – V. D. Nefedov, N. G. Molchanova, V. E. Zhuravlev, and T. I. Bulycheva	862	889
Extraction of Complex Acids with Oxygen-Containing Solvents. XVII. The Extraction of Trivalent Antimony from Solutions of Hydrohalic Acids – S. I. Semenov, B. Z. Iofa, and N. A. Novikova	865	892
The Extraction of Silver by Di-2-Ethylhexylphosphoric Acid in n-Decane from Perchloric Acid Solutions – V. S. Smelov, V. P. Lanin, and Z. A. Smyk	868	894
The Oxidation of Neptunium (VI) by Hypobromite Ions – V. P. Shilov, N. N. Krot, and A. D. Gel'man	870	896
Separation of Uranium (IV) and (VI) by the Method of Partition Column Chromatography – V. A. Luginin and I. A. Tserkovnitskaya	873	898
The Hydrolysis of Caprinohydroxamic Acid – M. E. Obukhova, V. G. Voden, and M. F. Pushlenkov	875	900
The Formation of a Complex of Thorium with Caprinohydroxamic Acid – M. E. Obukhova, V. G. Voden, and M. F. Pushlenkov	877	901
Thermodynamics of Structural Changes of Water during the Dissolution of Halides of the Rare Earth and Actinide Elements – G. A. Krestov and I. V. Egorova	879	903
Self-Diffusion of $^{36}Cl^-$ in Aqueous Solutions of Lithium, Sodium, Potassium, Cesium, and Ammonium Chlorides – V. V. Goncharov, V. I. Yashkichev, V. G. Markova, and L. S. Alekseeva	881	905
Quantitative Description of Processes of Radiation Aging of Plastic Scintillators – V. M. Ékkerman, O. A. Gunder, and V. S. Koba	883	907
Analytical Possibilities of a Betatron with Intrachamber Irradiation. I. The Elements H to Br – R. A. Kuznetsov	885	908

LETTERS TO THE EDITOR

The Oxidation of Neptunium (VI) by Plutonium (VII) and Manganese (VII) – V. P. Shilov, N. N. Krot, and A. D. Gel'man 888 911

INDEX

Author Index, Volume 12, Numbers 1-6, 1970 891

Tables of Contents, Volume 12, Numbers 1-6, 1970 895